annular surface **44** which defines the chamfered perimeter edge **14** on anterior shell **12**. A gate **46** is formed through upper die cover **34** and extends into the cavity formed between concave surface **38** and convex surface **42**. The gate **46** is coupled to an injection molding system **48** suitable for injecting an elastomeric material into the cavity.

A second die assembly **50** is provided which includes the lower die cavity **32** used in the first die assembly **30** and a die plate **52**. The die plate **52** has a generally flat upper die surface **54** which may abut the perimeter edge **14** of the anterior shell **12** and extends inwardly towards the nipple/aerola region **20**. As shown in FIG. **2**B, the die cavity **32** is positionable into an abutting relationship with die plate **52** on a margin **56** which may be slightly relieved from the upper die surface **54**. Gates **58** are formed in the margin **56** of the die plate **52** and extend from the horizontal surface to the boundary **60** of the die plate **52** for directing excess elastomeric material away from the prosthesis **10** during fabrication.

With reference now to FIG. **4**, the fabrication process will be further explained. As presently preferred, a first mold cavity **32** is provided in an upright position with the concaved cavity facing upwardly. The nipple/areola region **20** of the breast prosthesis **10** is formed by depositing elastomeric material colored with pigments of red, purple and gold and mixed with rayon flocking fibers to simulate the color and texture of the nipple/areola region of a human breast. This material is permitted to partially cure.

While the nipple/aerola region cures, the first mold cavity **32** is enclosed with a die cover **34** yielding a thin-walled cavity to define what will become the anterior shell **12**. Conventional injection molding process is used to inject elastomeric material into the first mold assembly **30** and form the anterior shell **12**. The anterior shell **12** is allowed to substantially cure, typically for approximately four hours.

Once the anterior shell **12** is cured, the die cover **34** is removed from the die cavity **32** and the sprue **48** extending from the interior surface of anterior shell **12** is trimmed. A die plate **52** is provided with the upper surface **54** which is spread with a partially cured elastomeric material. In this regard, it is important that the elastomeric material be partially cured to a degree sufficient such that its viscosity will allow the elastomeric material to remain on the relatively flat horizontal surface **54** formed on die plate **52**. Alternatively, the die plate **52** may be provided with a seal or similar feature around the boundary **60** for confining the elastomeric material on the upper surface **54**.

A layer of adhesive **62** is applied to the perimeter edge **14** of the anterior shell **12**. A suitable adhesive is selected to enhance adhesion and induce vulcanization or similar process in which the polymer molecules are linked to other polymer molecules by atomic bridges to form an air tight bond. While a vulcanization process in presently preferred, other acceptable processes such as similar thermostatic or thermoplastic processes may be utilized to achieve an air tight interface.

Next, the die cavity **32** is rotated 180° from its position as shown in FIG. **1** into an inverted position as shown in FIGS. **2**A and **2**B. The die cavity **32** is then lowered on top of die plate **52** and aligned with pins **36** in a manner similar to that described with reference to FIG. **1**. Sufficient adhesion exists between the anterior shell **12** and die cavity **32** to support the anterior shell **12** in the concave position above posterior portion **16**. The interior cavity **18** defined by anterior shell **12** and posterior portion **16** captures ambient air to create air-filled interior cavity **18**. The breast prosthesis **10** is allowed to fully cure, taking approximately three to six hours.

Once fully cured, the die plate **52** is removed form the die cavity **32**. The breast prosthesis **10** is removed from die cavity **32**. The molded breast **10** may include some flash material extending from the perimeter regions which may be trimmed using conventional processes. The breast prosthesis **10** is then washed and talced to provide an acceptable tactile characteristic simulating that of the human skin.

The foregoing description of the embodiments has been provided for purposes of illustration and description. It is not intended to be exhaustive or to limit the invention. Individual elements or features of a particular embodiment are generally not limited to that particular embodiment, but, where applicable, are interchangeable and can be used in a selected embodiment, even if not specifically shown or described. The same may also be varied in many ways. Such variations are not to be regarded as a departure from the invention, and all such modifications are intended to be included within the scope of the invention.

What is claimed is:

1. An external breast prosthesis comprising:

a posterior shell; and

an anterior shell defining a cup shaped body having a uniform wall thickness and a chamfered perimeter edge, the posterior shell covering the cup-shaped body to form an air-filled interior cavity;

wherein the chamfered perimeter edge forms a mitered joint between the anterior shell and the posterior shell.

2. The external breast prosthesis of claim **1** wherein the anterior shell and the posterior shell are formed with an elastomeric material.

3. The external breast prosthesis of claim **2** comprising further comprising an adhesive layer interposed between the chamfered perimeter edge and the posterior shell.

4. The external breast prosthesis of claim **1** comprising further comprising an areola region formed on a surface of the anterior shell opposite the posterior shell.

5. The external breast prosthesis of claim **4** wherein the areola region has a nipple formed therein.

6. The external breast prosthesis of claim **4** wherein the anterior shell, the areola region and the posterior shell are formed with an elastomeric material, the areola region further including a flocking fiber.

7. An external breast prosthesis comprising an elastomeric anterior shell defining a cup shaped body having a uniform wall thickness, an elastomeric posterior shell covering the cup-shaped body and forming an air-tight interior cavity, and an air-filled chamber consisting of an air volume sealed within the interior cavity, wherein the anterior shell, the posterior shell and the air-filled chamber define a valve-less prosthesis.

8. The external breast prosthesis of claim **7** wherein the anterior shell has a chamfered perimeter edge forming a mitered joint with the posterior shell.

9. The external breast prosthesis of claim **8** comprising further comprising an adhesive layer interposed between the chamfered perimeter edge and the posterior shell.

10. The external breast prosthesis of claim **7** comprising further comprising an areola region formed on a surface of the anterior shell opposite the posterior shell.

11. The external breast prosthesis of claim **10** wherein the areola region has a nipple formed therein.

12. The external breast prosthesis of claim **9** the areola region further including a flocking fiber.

13. The external breast prosthesis of claim **1** consisting of the anterior shell, the posterior shell, and the air-filled interior cavity.